

An epidemiologic study of 63,561 workers ever employed at the Idaho National Engineering and Environmental Laboratory between its 1949 construction and 1991 was recently completed. Workers were followed for mortality through 1999, and exposures to external ionizing radiation were assessed through 1998. Workers were also classified by likelihood of potential exposures to internal radiation. The relation of internal ionizing radiation exposures to mortality from lymphatic and hematopoietic cancers was assessed using Poisson regression. The rate of death from non-Hodgkin lymphoma was elevated in the cohort compared to the general population (Standardized Mortality Ratio = 1.26, 95% CI: 1.05, 1.50). Mortality was elevated among workers with cumulative doses of 100 mSv or greater, compared to workers receiving less than 1 mSv. An increasing trend in mortality risk was observed with increasing dose, although its significance depended on whether unexposed radiation-monitored workers were included in the analysis. The excess relative risk per 10 mSv was 0.020 (upper 95% confidence limit: 0.100) for non-Hodgkin lymphoma, 0.054 (95% CI: -0.0037, 0.34) for leukemia excluding chronic lymphocytic, and 0.064 (95% CI: -0.02, 0.35) for multiple myeloma. Other occupational and non-occupational factors affecting these risk estimates will be discussed.